

PATENT COOPERATION TREATY

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From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
TODD MATTINGLY
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PCTNOTIFICATION OF TRANSMITTAL OF
INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing
(day/month/year)

14 NOV 2003

Applicant's or agent's file reference

25791.90.02

IMPORTANT NOTIFICATION

International application No.

PCT/US03/15020

International filing date (day/month/year)

12 May 2003 (12.05.2003)

Priority date (day/month/year)

26 June 2002 (26.06.2002)

Applicant

EVENTURE GLOBAL TECHNOLOGY

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US

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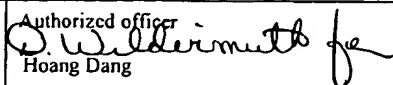
PATENT COOPERATION TREATY

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CORRECTED

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 25791.90.02	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US03/15020	International filing date (day/month/year) 12 May 2003 (12.05.2003)	Priority date (day/month/year) 26 June 2002 (26.06.2002)
International Patent Classification (IPC) or national classification and IPC IPC(7): E21B 23/04, 23/08 and US Cl.: 382, 383, 207		
Applicant EVENTURE GLOBAL TECHNOLOGY		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>8</u> sheets.</p> <p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input checked="" type="checkbox"/> Certain observations on the international application</p>		
Date of submission of the demand 30 December 2003 (30.12.2003)	Date of completion of this report 07 October 2005 (07.10.2005)	
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer  Hoang Dang Telephone No. 703-308-2168	

Form PCT/IPEA/409 (cover sheet)(July 1998)

I. Basis of the report**1. With regard to the elements of the international application:***

- ☐ the international application as originally filed.
- ☒ the description:
pages 1-8 as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☒ the claims:
pages NONE as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages 9-16, filed with the letter of 23 February 2005 (23.02.2005).
- ☒ the drawings.
pages 1-5 as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☐ the sequence listing part of the description:
pages NONE as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☒ the claims, Nos. 6, 7, 10-15, 21 and 46
- ☐ the drawings, sheets/fig NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US03/15020**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	Claims <u>1-5, 8, 9, 16-20, 31-45 and 53-58</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>1-5, 8, 9, 16-20, 31-45 and 53-58</u>	YES
	Claims <u>NONE</u>	NO
Industrial Applicability (IA)	Claims <u>1-5, 8, 9, 16-20, 31-45 and 53-58</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Claims 1-5, 8, 9, 16-20, 31-45 and 53-58 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a method as claimed and including the step of injecting fluidic material through the non-tapered exterior surface of the expansion cone above the tapered exterior surface of the expansion cone into the annulus and conveying the fluidic material through the remaining length of the annulus. Similarly, the prior art does not teach or fairly suggest an apparatus for radially expanding a tubular member as claimed and including one or more radial passages that extend from the longitudinal passage of the expansion device to the outer surface thereof.

Claims 1-5, 8, 9, 16-20, 31-45 and 53-58 meet the criteria set out in PCT Article 33(4), and thus the system, apparatus or method for radially expanding a tubular member as claimed has industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US03/15020

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claims 22-30 and 47-52 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claims 22-30 and 47-52 are indefinite for the following reason(s): These claims depend directly or indirectly on either cancelled claim 21 or claim 46..

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
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PCT

COMMUNICATION IN CASES FOR WHICH
NO OTHER FORM IS APPLICABLE

Applicant's or agent's file reference 25791.90.02	Date of Mailing (day/month/year) 14 NOV 2009
International application No. PCT/US03/15020	International filing date (day/month/year) 12 May 2003 (12.05.2003)
Applicant EVENTURE GLOBAL TECHNOLOGY	

1. ☐ REPLY DUE within ____ months/days from the above date of mailing

☒ NO REPLY DUE

2. COMMUNICATION:

See enclosed Corrected PCT/IPEA/416 and PCT/IPEA/409 forms.

Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/ US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer Hoang Dang Telephone No. 571-272-3600
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What is claimed is:

1. A method of radially expanding a tubular member, comprising:
positioning an expansion cone comprising a tapered exterior surface and non-tapered exterior surfaces positioned above and below the tapered exterior surface within the tubular member;
defining an annulus between the tapered and non-tapered exterior surfaces of the expansion cone and the interior surfaces of the tubular member;
displacing the expansion cone relative to the tubular member to radially expand and plastically deform the tubular member; and
during the displacement of the expansion cone relative to the tubular member, injecting fluidic material through the non-tapered exterior surface of the expansion cone above the tapered exterior surface of the expansion cone into the annulus and conveying the fluidic material through the remaining length of the annulus.
2. The method of claim 1, wherein displacing the expansion cone relative to the tubular member comprises:
pulling the expansion cone through the tubular member using fluid pressure.
3. The method of claim 2, wherein pulling the expansion cone through the tubular member using fluid pressure comprises:
pressuring an annular chamber within the tubular member above the expansion cone.
4. The method of claim 1, wherein displacing the expansion cone relative to the tubular member comprises:
pushing the expansion cone through the tubular member using fluid pressure.
5. The method of claim 4, wherein pushing the expansion cone through the tubular member using fluid pressure comprises:
pressurizing a chamber within the tubular member below the expansion cone.
6. Previously Cancelled
7. Previously Cancelled
8. The method of claim 1, wherein the fluidic material is injected through the tapered exterior surface of the expansion cone into a portion of the annulus bounded by the tapered

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exterior surface.

9. The method of claim 1, wherein the fluidic material is injected through non-tapered exterior surface of the expansion cone above the tapered exterior surface of the expansion cone and the tapered exterior surface of the expansion cone into a portion of the annulus above the tapered exterior surface and another portion of the annulus bounded by the tapered exterior surface.

10. Previously Cancelled

11. Previously Cancelled

12. Previously Cancelled

13. Previously Cancelled

14. Previously Cancelled

15. Previously Cancelled

16. A system for radially expanding a tubular member, comprising:
means for positioning an expansion cone within the tubular member;
means for displacing the expansion cone relative to the tubular member; and
during the displacement of the expansion cone relative to the tubular member, means for hydroplaning the tubular member on the expansion cone;
wherein means for hydroplaning the tubular member on the expansion cone comprises:
means for injecting a fluidic material into an annulus between the expansion cone and the tubular member.

17. The system of claim 16, wherein means for displacing the expansion cone relative to the tubular member comprises:
means for pulling the expansion cone through the tubular member using fluid pressure.

18. The system of claim 17, wherein means for pulling the expansion cone through the tubular member using fluid pressure comprises:
means for pressuring an annular chamber within the tubular member above the expansion cone.

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19. The system of claim 16, wherein means for displacing the expansion cone relative to the tubular member comprises:

means for pushing the expansion cone through the tubular member using fluid pressure.

20. The system of claim 19, wherein means for pushing the expansion cone through the tubular member using fluid pressure comprises:

means for pressurizing a chamber within the tubular member below the expansion cone.

21. (Presently Canceled)

22. The system of claim 21, wherein the expansion cone comprises a conical outer surface; and wherein the means for injecting a fluidic material into the annulus between the expansion cone and the tubular member comprises means for injecting a fluidic material a portion of the annulus above the conical outer surface.

23. The system of claim 21, wherein the expansion cone comprises a conical outer surface; and wherein the means for injecting a fluidic material into the annulus between the expansion cone and the tubular member comprises means for injecting a fluidic material into a portion of the annulus bounded by the conical outer surface.

24. The system of claim 21, wherein the expansion cone comprises a conical outer surface; and wherein the means for injecting a fluidic material into the annulus between the expansion cone and the tubular member comprises means for injecting a fluidic material into a portion of the annulus above the conical outer surface and another portion of the annulus bounded by the conical outer surface.

25. The system of claim 21, wherein means for displacing the expansion cone relative to the tubular member comprises:

means for pulling the expansion cone through the tubular member using fluid pressure.

26. The system of claim 25, wherein means for pulling the expansion cone through the tubular member using fluid pressure comprises:

means for pressuring an annular chamber within the tubular member above the expansion cone.

27. The system of claim 26, wherein the operating pressure of the annular chamber and the annulus are approximately equal.

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28. The system of claim 21, wherein means for displacing the expansion cone relative to the tubular member comprises:
means for pushing the expansion cone through the tubular member using fluid pressure.
29. The system of claim 28, wherein means for pushing the expansion cone through the tubular member using fluid pressure comprises:
means for pressurizing a chamber within the tubular member below the expansion cone.
30. The system of claim 29, wherein the operating pressure of the chamber and the annulus are approximately equal.
31. An apparatus for radially expanding and plastically deforming a tubular member, comprising:
a tubular support member that defines a longitudinal passage;
a tubular expansion cone coupled to an end of the tubular support member that defines a longitudinal passage and one or more radial passages that extend from the longitudinal passage and extend to an outer surface of the tubular expansion cone;
a tubular expansion cone launcher that receives the tubular expansion cone;
a tubular shoe coupled to an end of the tubular expansion cone launcher that defines a valveable longitudinal passage;
an expandable tubular member coupled to another end of the tubular expansion cone launcher; and
one or more cup seals coupled to the tubular support member for sealingly engaging the interior surface of the expandable tubular member.
32. The apparatus of claim 31, wherein the tubular expansion cone comprises a tapered outer surface and a non tapered outer surface; and wherein at least one of the radial passages extend to the non tapered outer surface.
33. The apparatus of claim 32, wherein at least one of the radial passages extend to the tapered outer surface.
34. The apparatus of claim 31, wherein the tubular expansion cone comprises a tapered outer surface and a non tapered outer surface; wherein at least one of the radial passages extend to the non tapered outer surface; and wherein at least one other of the radial passages extend to the tapered outer surface.

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35. A method of radially expanding a tubular member, comprising:
positioning an expansion device comprising an exterior expansion surface within the tubular member;
defining an annulus between the exterior expansion surface of the expansion device and the interior surface of the tubular member;
displacing the expansion device relative to the tubular member to radially expand and plastically deform the tubular member; and
during the displacement of the expansion device relative to the tubular member, injecting fluidic material through expansion device into the annulus and conveying the fluidic material through the remaining length of the annulus.
36. The method of claim 35, wherein displacing the expansion device relative to the tubular member comprises:
pulling the expansion device through the tubular member using fluid pressure.
37. The method of claim 36, wherein pulling the expansion device through the tubular member using fluid pressure comprises:
pressuring an annular chamber within the tubular member above the expansion device.
38. The method of claim 35, wherein displacing the expansion device relative to the tubular member comprises:
pushing the expansion device through the tubular member using fluid pressure.
39. The method of claim 38, wherein pushing the expansion device through the tubular member using fluid pressure comprises:
pressurizing a chamber within the tubular member below the expansion device.
40. The method of claim 35, wherein the fluidic material is injected through the exterior expansion surface of the expansion device into a portion of the annulus bounded by the exterior expansion surface of the expansion device.
41. A system for radially expanding a tubular member, comprising:
means for positioning an expansion device within the tubular member;
means for displacing the expansion device relative to the tubular member; and
during the displacement of the expansion device relative to the tubular member, means for hydroplaning the tubular member on the expansion device;

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wherein means for hydroplaning the tubular member on the expansion device

comprises:

means for injecting a fluidic material into an annulus between the expansion device and the tubular member.

42. The system of claim 41, wherein means for displacing the expansion device relative to the tubular member comprises:

means for pulling the expansion device through the tubular member using fluid pressure.

43. The system of claim 42, wherein means for pulling the expansion device through the tubular member using fluid pressure comprises:

means for pressuring an annular chamber within the tubular member above the expansion device.

44. The system of claim 41, wherein means for displacing the expansion device relative to the tubular member comprises:

means for pushing the expansion device through the tubular member using fluid pressure.

45. The system of claim 44, wherein means for pushing the expansion device through the tubular member using fluid pressure comprises:

means for pressurizing a chamber within the tubular member below the expansion device.

46. (Presently Canceled)

47. The system of claim 46, wherein means for displacing the expansion device relative to the tubular member comprises:

means for pulling the expansion device through the tubular member using fluid pressure.

48. The system of claim 47, wherein means for pulling the expansion device through the tubular member using fluid pressure comprises:

means for pressuring an annular chamber within the tubular member above the expansion device.

49. The system of claim 48, wherein the operating pressure of the annular chamber and the annulus are approximately equal.

50. The system of claim 46, wherein means for displacing the expansion device

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relative to the tubular member comprises:

means for pushing the expansion device through the tubular member using fluid pressure.

51. The system of claim 50, wherein means for pushing the expansion device through the tubular member using fluid pressure comprises:

means for pressurizing a chamber within the tubular member below the expansion device.

52. The system of claim 29, wherein the operating pressure of the chamber and the annulus are approximately equal.

53. An apparatus for radially expanding and plastically deforming a tubular member, comprising:

a tubular support member that defines a longitudinal passage;

an expansion device coupled to an end of the tubular support member that defines a longitudinal passage and one or more radial passages that extend from the longitudinal passage and extend to an outer surface of the expansion device;

a tubular expansion launcher that receives and mates with the expansion device;

an expandable tubular member coupled to an end of the tubular expansion launcher; and

one or more cup seals coupled to the tubular support member for sealingly engaging the interior surface of the expandable tubular member.

54. The apparatus of claim 53, wherein the expansion device comprises a tapered outer surface and a non tapered outer surface; and wherein at least one of the radial passages extend to the non tapered outer surface.

55. The apparatus of claim 54, wherein at least one of the radial passages extend to the tapered outer surface.

56. The apparatus of claim 53, wherein the expansion device comprises a tapered outer surface and a non tapered outer surface; wherein at least one of the radial passages extend to the non tapered outer surface; and wherein at least one other of the radial passages extend to the tapered outer surface.

57. A method of radially expanding a tubular member, comprising:
positioning an expansion device within the tubular member;

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defining an annulus between the expansion device and the tubular member;
displacing the expansion device relative to the tubular member in a first direction to
radially expand and plastically deform the tubular member; and
during the displacement of the expansion device relative to the tubular member,
injecting fluidic material through the expansion device into the annulus and
conveying the fluidic material through the remaining length of the annulus in a
second direction;
wherein the first and second directions are opposite to one another.

58. A method of radially expanding a tubular member, comprising:
positioning an expansion device within the tubular member;
defining an annulus between the expansion device and the interior surface of the
tubular member;
displacing the expansion device relative to the tubular member to radially expand and
plastically deform the tubular member; and
during the displacement of the expansion device relative to the tubular member,
pressurizing the annulus by injecting fluidic material through the expansion
device into the annulus.